AP CHEMISTRY WORKSHEET: PERIODIC TRENDS (ANSWERS 1-10)

1) O < C < Al < K

2) Ne < Al < S < O

3) Electron affinity is a measure of the energy change that occurs when an atom grabs an electron. Ionization energy is a measure of how much energy it takes to pull electrons off of an element. Both values are for atoms in the gaseous phase.

4) It is harder to pull electrons off of F because F has a higher electronegativity than I. Iodine has a lower electronegativity b/c of the shielding effect, which states that electrons in inner energy levels tend to push electrons in outer energy levels away from the nucleus. This pushing makes it harder for iodine to grab electrons.

5) Because they have the same number of valence electrons and similar electron configurations.

6) F has a smaller atomic radius than O because F has one more nuclear charge. F has a smaller radius than Cl because F has eight fewer electrons.

7) They have large negative electron affinities because by gaining electrons, they acquire noble gas configurations.

8) Nonmetals because the nuclear charge increases; shielding effect is the same, but it creates greater electron attraction.

9) a) Na b) P

10) No, it already has full outermost orbitals.